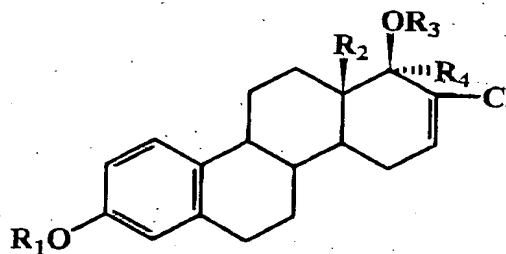


## Claims

1. Use of ER $\beta$ -selective ligands for production of medicaments for regulating fertility with or without additional use of follicular sex steroids.
2. Use of ER $\beta$ -selective agonists according to claim 1 for treatment of female infertility.
3. Use according to claim 2 to support IVF (in vitro fertilisation) in connection with in vivo treatment.
4. Use according to claim 2 for treatment of females which are suffering from ovarian infertility (PCO syndrome).
5. Use for treatment of ovarian failure associated with aging.
6. Use of ER $\beta$ -selective antagonists according to claim 1 for ovarian contraception.
7. Use according to claim 6 for inhibiting folliculogenesis.
8. Use according to claim 6 for inhibiting ovulation.
9. Use according to claim 6 to inhibit preimplantational development of ovulated oocytes.
10. Use of ER $\beta$ -selective ligands according to claim 1 for production of medicaments for regulating fertility without additional use of follicular sex steroids.
11. Use of ER $\beta$ -selective ligands according to claim 10 for production of medicaments for regulating fertility without additional use of a progestin.
12. 17-Chloro-D-homosteroids of general formula I



(I)

In which

$R_1$  means a hydrogen atom or a  $C_{1-6}$  alkanoyl radical or benzoyl radical,

$R_2$  means a  $C_{1-6}$  alkyl group,

$R_3$  means a hydrogen atom, a  $C_{1-6}$  alkyl radical,  $C_{1-6}$  alkanoyl radical or benzoyl radical, and

$R_4$  means a hydrogen atom, a  $C_{1-6}$  alkyl radical, a  $C_nF_{2n+1}$  group, in which  $n = 1, 2$  or  $3$ , or a  $C\equiv CR_5$  group, in which  $R_5$  is a hydrogen atom, a  $C_{1-6}$  alkyl radical or an unsubstituted or substituted phenyl radical.

13. Compounds of general formula I according to claim 12, namely

17-Chloro-17 $\alpha$ -ethinyl-17a,18a-dihomo-estra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -propinyl-17a,18a-dihomo-estra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-13 $\beta$ -ethyl-17 $\alpha$ -methyl-17a,18a-dihomo-estra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17 $\beta$ -acetoxy-17-chloro-17 $\alpha$ -methyl-17a,18a-dihomo-estra-1,3,5(10),16-tetraene-3-ol

17-chloro-17 $\alpha$ -(trifluoromethyl)-17a,18a-dihomo-estra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -(pentafluoroethyl)-17a,18a-dihomo-estra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -methyl-17 $\beta$ -(methoxy)-17a,18a-dihomo-estra-1,3,5(10),16-tetraene-3-ol

17-chloro-17a-homoestra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -(trifluoromethyl)-17a-homoestra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -(pentafluoroethyl)-17a-homoestra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -methyl-17a-homoestra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -ethyl-17a-homoestra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -ethinyl-17a-homoestra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -propinyl-17a-homoestra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol

17-chloro-17 $\alpha$ -(trifluoromethyl)-17a-homoestra-1,3,5(10),16-tetraene-3,17 $\beta$ -diol-diacetate

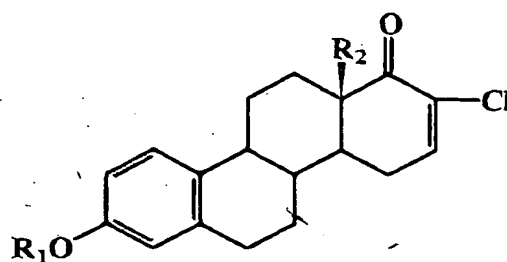
17 $\beta$ -acetoxy-17-chloro-17 $\alpha$ -(trifluoromethyl)-17a-homoestra-1,3,5(10),16-tetraene-3-ol

17-chloro-17 $\beta$ -methoxy-17 $\alpha$ -(trifluoromethyl)-17a-homoestra-1,3,5(10),16-tetraene-3-ol

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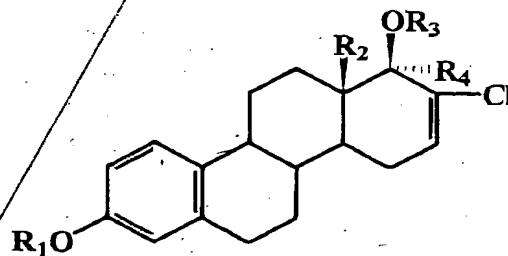
(II)

in which

R<sub>1</sub> means a hydrogen atom, a C<sub>1-6</sub> alkyl radical, a C<sub>1-6</sub> alkanoyl radical or benzoyl radical,

R<sub>2</sub> means a C<sub>1-6</sub> alkyl group,

is converted with a magnesium-organic reagent of general formula BrMg alkyl, BrMg alkenyl or BrMg alkynyl or with acetylene or an alkyl- or aryl-substituted acetylene in the presence of bases such as *tert*-BuOK or with a lithium-organic compound such as LiC<sub>2</sub>F<sub>5</sub> or with a silicon-organic compound such as trifluoromethyl trimethylsilane into a 17 $\alpha$ -substituted compound of general formula III,



(III)

in which R<sub>1</sub> is a hydrogen atom, a C<sub>1-6</sub> alkyl radical or C<sub>1-6</sub> alkanoyl radical or benzoyl radical, and R<sub>2</sub> is a C<sub>1-6</sub> alkyl group, R<sub>3</sub> is a hydrogen atom, a metal atom or a silyl group, and R<sub>4</sub> is a hydrogen atom, a C<sub>1-6</sub> alkyl group, a C<sub>n</sub>F<sub>2n+1</sub> group, in which n = 1, 2 or 3, or is a C $\equiv$ CR<sub>5</sub> group, in which R<sub>5</sub> is a hydrogen atom, a C<sub>1-6</sub> alkyl radical or an unsubstituted or substituted phenyl radical,

whereby in the case of R<sub>5</sub> = hydrogen, the free 17 $\alpha$ -ethynyl compound of general formula III is further modified by a SONAGASHIRA reaction to form compounds

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